APPENDIX F

LABORATORY ANALYSIS OF POST DISPOSAL SAMPLES

This appendix contains the results of laboratory analyses of four samples taken after all TCRA activities were terminated at Camp Grant, Illinois. The samples include one water/ice, one sand and two composites as described in Section 4. Concentrations and all semivolatile and nitroaromatic / nitramine compound were below the MDL. All metals were within the Illinois range of values except for mercury. It appears that mercury levels in the sand and soil samples are the same and are outside the range of 0.02 to 0.99 $\mu g/g_{soil}$.

SouthEastern
SEAS
ANALYTICAL SERVICES, INC.
[illegible] OSTER DR., SUITE [illegible] • HUNTSVILLE, ALABAMA 35816 • 205 / 533-[illegible]

[illegible]/1995

Laboratory Report

Client: Nichols Research Corporation
4040 S. Memorial Parkway
Huntsville, AL 35815

Attn: [illegible] Martin

Sample ID: [illegible] 0511140930
Date Received: 11/10/1995
Purchase Order No.: [illegible]

Lab. No.: [illegible]
Date Sampled: [illegible]
Time Sampled: [illegible]

Parameter	Results	Method	Analyst	Date	Time
Nitrate	0.162 mg/L	9110B	[illegible]	11-20-95	[illegible]
Copper (T)	< 0.01 mg/L	6010	fp	11-20-95	0800
Lead (T)	< 0.03 mg/L	6010	fp	11-20-95	0800
Chromium (T)	< 0.02 mg/L	6010	fp	11-20-95	0800
Mercury (T)	< 0.0[illegible] mg/L	6010	fp	11-20-95	0800
Barium (T)	< 0.[illegible] mg/L	6010	fp	11-20-95	0800
Nickel (T)	< 0.[illegible] mg/L	6010	fp	11-20-95	0800
Potassium (T)	< [illegible] mg/L	6010	fp	11-20-95	0800
Zinc (T)	< 0.01 mg/L	6010	fp	11-20-95	0800
Cadmium (T)	< 0.01 mg/L	6010	fp	11-20-95	0800
Aluminum (T)	0.33 mg/L	6010	fp	11-20-95	0800
Calcium (T)	0.53 mg/L	6010	fp	11-20-95	0800
Lithium (T)	< 0.05 mg/L	6010	fp	11-20-95	0800

Method Sources
EPA-Test Methods for Evaluating Solid Waste, SW 846 [illegible],
EPA-Methods for Chemical Analysis of Water and Wastes (1983)
Standard Methods for the Examination of Water and Waste
Water, 19th Ed.
40 CFR Part 136
NIOSH Manual of Analytical Methods (1984)

SouthEastern SEAS ANALYTICAL SERVICES, INC.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/625

Client : Nichols Research Corporation
Sample Description 9611[illegible]
Matrix : WATER
Analyst: [illegible]

Laboratory No: 1416-[illegible]
Date Received : [illegible]
Date Extracted: [illegible]
Date Analyzed: [illegible]

Compounds	MDL1 ug/L	Conc2 ug/L	Compounds	MDL1 ug/L	Conc2 ug/L
Bis(2-chloroethyl)ether	100	BMDL	4-Chlorophenyl phenyl ether	100	BMDL
1,3-Dichlorobenzene	100	BMDL	Fluorene	100	BMDL
1,2-Dichlorobenzene	100	BMDL	Azobenzene	100	BMDL
1,4-Dichlorobenzene	100	BMDL	Hexachlorobenzene	100	BMDL
Bis(2-chloroisopropyl)ether	100	BMDL	Phenanthrene	100	BMDL
N-Nitroso-di-n-propylamine	100	BMDL	Anthracene	100	BMDL
Hexachloroethane	100	BMDL	Dibutyl phthalate	100	BMDL
Nitrobenzene	[illegible]	BMDL	Fluoranthene	100	BMDL
Isophorone	100	BMDL	Pyrene	100	BMDL
Bis(2-chloroethoxy)methane	100	BMDL	Butylbenzyl phthalate	100	BMDL
1,2,4-Trichlorobenzene	100	BMDL	3,3'-Dichlorobenzidine	100	BMDL
Naphthalene	100	BMDL	Benzo(a)anthracene	100	BMDL
Hexachlorobutadiene	100	BMDL	Chrysene	100	BMDL
2-Chloronaphthalene	100	BMDL	Bis(2-ethylhexyl)phthalate	100	BMDL
Dimethyl phthalate	100	BMDL	Di-n-octyl phthalate	100	BMDL
2,6-Dinitrotoluene	100	BMDL	Benzo(b)fluoranthene	100	BMDL
Acenaphthylene	100	BMDL	Benzo(k)fluoranthene	100	BMDL
Acenaphthene	100	BMDL	Benzo(a)pyrene	100	BMDL
2,4-Dinitrotoluene	[illegible]	BMDL	Indeno(1,2,3-cd)pyrene	100	BMDL
Diethyl phthalate	100	BMDL	Dibenzo(a,h)anthracene	100	BMDL
Benzidine	200	BMDL	Benzo(g,h,i)perylene	100	BMDL
4-Bromophenyl phenyl ether	100	BMDL	N-Nitrosodiphenylamine	100	BMDL
N-nitrosodimethylamine	100	BMDL	OTHER COMPOUNDS **		
Hexachlorocyclopentadiene	[illegible]	BMDL	2-Methylnaphthalene	100	BMDL

SURROGATE RECOVERIES	% REC
Nitrobenzene-D5	[illegible]
2-Fluorobiphenyl	66
Terphenyl-d14	122

1 MDL= Method Detection Limit
2 BMDL= Below Method Detection Limit
3 ND= Not Determined

Reviewed by: [signature]

Date: [illegible]

Comments: * Recovery indicated outside of acceptance limits.
** Tentatively identified and quantitatively estimated.

SouthEastern SEAS ANALYTICAL SERVICES INC.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 625/8270

Client : Nichols Research Corporation
Sample Description: [illegible]
Matrix: WATER
Analyst: R.M. [illegible]

Laboratory No: 1116-8006-01
Date Received: 11/[illegible]/95
Date Extracted: [illegible]/95
Date Analyzed: 11/20/95

Compounds	MDL1 ug/L	Conc2 ug/L	Additional Compounds	MDL1 ug/L	Conc2 ug/L
Phenol	100	BMDL	2-Methylnaphthalene	100	BMDL
2-Chlorophenol	100	BMDL	[illegible]	[illegible]	BMDL
2-Nitrophenol	100	BMDL	[illegible]-Aminonaphthalene	100	BMDL
2,4-Dimethylphenol	100	BMDL	1-[illegible]	100	BMDL
2,4-Dichlorophenol	100	BMDL	[illegible]	100	BMDL
4-Chloro-3-Methylphenol	100	BMDL			
2,4,5-Trichlorophenol	100	BMDL			
2,4-Dinitrophenol	500	BMDL			
4-Nitrophenol	500	BMDL			
2-Methyl-4,6-Dinitrophenol	500	BMDL			
Pentachlorophenol	500	BMDL			
OTHER COMPOUNDS					
2- &/or 3-Methylphenol	100	BMDL			
4-Methylphenol	100	BMDL			
2,4,6-Trichlorophenol	100	BMDL			

SURROGATE RECOVERIES	% REC
Phenol-d6	35
2-Fluorophenol	41
2,4,6-Tribromophenol	35

1 MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 ND= Not Determined

Reviewed by: [signature]
Date: [illegible]

Comments: * Presence indicated, but less than method detection limit.
** Tentatively identified and quantitatively estimated

SouthEastern SEAS

Nitroaromatics and Nitramines by HPLC

USEPA Method 8330

Client Name: Nichols Research Corporation
Client ID: 9511140930
SEAS ID: 1428 3236 01

Date Analyzed: 11/23/95
Date Received: 11/16/95
Date Extracted: 11/20/94

Compound	MDL mg/L	Conc mg/L
HMX	0.050	BMDL
RDX	1.02	BMDL
1,3,5-TNB	1.15	BMDL
1,3-DNB	0.428	NR
NB	0.515	NR
Tetryl	1.05	NR
2,4,6-TNT	0.764	BMDL
2-Am-DNT	0.851	NR
4-Am-DNT	0.428	NR
2,4-DNT	2.75	BMDL
2,6-DNT	2.05	BMDL
2-NT	1.12	NR
4-NT	3.83	NR
3-NT	1.91	NR

Comments: NR = Not Requested, BMDL = Below minimum detection limit
Analyst: Ellen Tollman
Approved:

SouthEastern SEAS ANALYTICAL SERVICES, INC

[illegible] DR., SUITE 1 · HUNTSVILLE, ALABAMA [illegible] · 205 / [illegible]

[illegible]

Laboratory Report

Client: Nichols Research Corporation
4040 S. Memorial Parkway
Huntsville, AL 35815

Attn: Tom Martin

Sample ID: Soil-[illegible]
Date Received 11/16/1995
Purchase Order No.: Quote

Lab. No.: [illegible]
Date Sampled: 1995 11 1[illegible]
Time Sampled: [illegible]

Parameter	Results	Method	Analyst	Date	Time
Nitrate	[illegible] mg/kg	4110B	[illegible]	11-20-95	[illegible]
Copper (T)	< [illegible] mg/kg	6010	jp	11-20-95	0800
Lead (T)	< [illegible] mg/kg	6010	jp	11-20-95	0800
Chromium (T)	[illegible] mg/kg	6010	jp	11-20-95	0800
Mercury (T)	< [illegible] mg/kg	6010	jp	11-20-95	0800
Cadmium (T)	[illegible] mg/kg	6010	jp	11-20-95	0800
Nickel (T)	< [illegible] mg/kg	6010	jp	11-20-95	0800
Potassium (T)	[illegible] mg/kg	6010	jp	11-20-95	0800
Zinc (T)	5.55 mg/kg	6010	jp	11-20-95	0800
[illegible] (T)	< [illegible] mg/kg	6010	jp	11-20-95	0800
Aluminum (T)	346 mg/kg	6010	jp	11-20-95	0800
Calcium (T)	[illegible] mg/kg	6010	jp	11-20-95	0800
[illegible] (T)	[illegible] mg/kg	6010	jp	11-20-95	0800

Method Sources:
EPA-Test Methods for Evaluating Solid Waste, SW-846 [illegible]
EPA-Methods for Chemical Analysis of Water and Wastes (1983)
Standard Methods for the Examination of Water and Waste-
water, 18th Ed.
40 CFR Part 136
[illegible] Manual of Analytical Methods ([illegible])

SouthEastern
SEAS
ANALYTICAL SERVICES, INC.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/625

Client : Nichols Research Corporation
Sample Description: 9511141012
Matrix : SOLID
Analyst: E.F. Parks

Laboratory No. 14_8-3205-02
Date Received: 11/16/95
Date Extracted: 11/20/95
Date Analyzed: 11/20/95

Compounds	MDL1 ug/Kg	Conc2 ug/Kg	Compounds	MDL1 ug/Kg	Conc2 ug/Kg
Bis(2-chloroethyl)ether	330	BMDL	4-Chlorophenyl phenylether	330	BMDL
1,3-Dichlorobenzene	330	BMDL	Fluorene	330	BMDL
1,2-Dichlorobenzene	330	BMDL	Azobenzene	330	BMDL
1,4-Dichlorobenzene	330	BMDL	Hexachlorobenzene	330	BMDL
Bis(2-chloroisopropyl)ether	330	BMDL	Phenanthrene	330	BMDL
N-Nitrosodi-n-propylamine	330	BMDL	Anthracene	330	BMDL
Hexachloroethane	330	BMDL	Dibutyl phthalate	330	BMDL
Nitrobenzene	330	BMDL	Fluoranthene	330	BMDL
Isophorone	330	BMDL	Pyrene	330	BMDL
Bis(2-chloroethoxy)methane	330	BMDL	Butylbenzyl phthalate	330	BMDL
1,2,4-Trichlorobenzene	330	BMDL	3,3-Dichlorobenzidine	330	BMDL
Naphthalene	330	BMDL	Benzo(a)anthracene	330	BMDL
Hexachlorobutadiene	330	BMDL	Chrysene	330	BMDL
2-Chloronaphthalene	330	BMDL	Bis(2-ethylhexyl)phthalate	330	BMDL
Dimethyl phthalate	330	BMDL	Di-n-octyl phthalate	330	BMDL
2,6-Dinitrotoluene	330	BMDL	Benzo(b)fluoranthene	330	BMDL
Acenaphthylene	330	BMDL	Benzo(k)fluoranthene	330	BMDL
Acenaphthene	330	BMDL	Benzo(a)pyrene	330	BMDL
2,4-Dinitrotoluene	330	BMDL	Indeno(1,2,3-cd)pyrene	330	BMDL
Diethyl phthalate	330	BMDL	Dibenzo(a,h)anthracene	330	BMDL
Benzidine	660	BMDL	Benzo(g,h,i)perylene	330	BMDL
4-Bromophenyl phenyl ether	330	BMDL	N-Nitrosodiphenylamine	330	BMDL
N-nitrosodimethylamine	330	BMDL	OTHER COMPOUNDS:**		
Hexachlorocyclopentadiene	330	BMDL	2-Methylnaphthalene	330	BMDL

SURROGATE RECOVERIES	% REC
Nitrobenzene-D5	116
2-Fluorobiphenyl	113
Terphenyl-d14	171

1 MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 ND= Not Determined

Reviewed by:

Date: 12-5-95

Comments: * Presence indicated, but less than method detection limit.
** Tentatively identified and quantitatively estimated.

SouthEastern SEAS
ANALYTICAL SERVICES INC.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/625

Client: Nebula Research Corporation
Sample Description: 951114012
Matrix: SOLID
Analyst: B.K. Parks

Laboratory No: 1413-0205-02
Date Received: 11/14/95
Date Extracted: 11/20/95
Date Analyzed: 11/20/95

Compounds	MDL1 ug/kg	Conc2 ug/kg	Additional Compounds	WTC1 ug/kg	Conc ug/kg
Phenol	330	BMDL	2-Methylnaphthalene	330	BMDL
2-Chlorophenol	330	BMDL	Acetophenone	330	BMDL
2-Nitrophenol	330	BMDL	2-Methylnaphthalene	330	BMDL
2,6-Dimethylphenol	330	BMDL	1-Methylpyrene	330	BMDL
2,4-Dichlorophenol	330	BMDL	2-Methylphenol	330	BMDL
4-Chloro-3-Methylphenol	330	BMDL			
2,4,6-Trichlorophenol	330	BMDL			
2,4-Dinitrophenol	1650	BMDL			
4-Nitrophenol	1650	BMDL			
2-Methyl-4,6-Dinitrophenol	1650	BMDL			
Pentachlorophenol	1650	BMDL			
OTHER COMPOUNDS:					
3- & or 4-Methylphenol	330	BMDL			
4-Methylphenol	330	BMDL			
2,4,6-Trichlorophenol	330	BMDL			

SURROGATE RECOVERIES	% REC
Phenol-d5	181
2-Fluorophenol	141
2,4,6-Tribromophenol	139

1 MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 NDs Not Determined

Reviewed by:

Date 12-5-95

Comments: * Presence indicated, but less than method detection limit.
** Tentatively identified and quantitatively estimated.

SouthEastern SEAS

Nitroaromatics and Nitramines by HPLC

USEPA Method 8330

Client Name: Nichols Research Corporation
Client ID: 9611341012
SEAS ID: 9418.3206-02

Date Analyzed 11/20/95
Date Received: 11/16/95
Date Extracted 11/20/94

Compound	MDL ug/Kg	Conc ug/Kg
HMX	26.1	BMDL
RDX	40.6	BMDL
1,3,5-TNB	45.9	BMDL
1,3-DNB	17.1	NR
NB	24.5	NR
Tetryl	42.1	NR
2,4,6-TNT	30.1	BMDL
2-Am-DNT	34.1	NR
4-Am-DNT	11.6	NR
2,4-DNT	[illegible]	BMDL
2,6-DNT	61.1	BMDL
2-NT	44.7	NR
4-NT	96.3	NR
3-NT	76.3	NR

Comments: NR = Not Requested BMDL = Below minimum detection limit
Analyst: Elise Tallman
Approved: ______

SouthEastern SEAS ANALYTICAL SERVICES INC.
1604 OSTER DR., SUITE 1 • HUNTSVILLE, ALABAMA 35816 • 205 / 534-6110

11/29/1995

Laboratory Report

Client: Nichols Research Corporation
4040 S. Memorial Parkway
Huntsville, AL 35815

Attn: Tim Mach

Sample ID: Soil-951114-1
Date Received: 11/15/1995
Purchase Order No.: Quote

Lab. No.: 1118-5105-03
Date Sampled: 1995-11-14
Time Sampled: 1015

Parameter	Results	Method	Analyst	Date	Time
Nitrate	< 5.00 mg/kg	4110B	JL	11-20-95	1540
Copper (T)	4.77 mg/kg	6010	Ep	11-20-95	0800
Lead (T)	< 3.14 mg/kg	6010	Ep	11-20-95	0800
Chromium (T)	1.31 mg/kg	6010	Ep	11-20-95	0800
Mercury (T)	< [illegible] mg/kg	6010	Ep	11-20-95	0800
Barium (T)	2.77 mg/kg	6010	Ep	11-20-95	0800
Nickel (T)	< 2.62 mg/kg	6010	Ep	11-20-95	0800
Potassium (T)	96 mg/kg	6010	Ep	11-20-95	0800
Zinc (T)	8.33 mg/kg	6010	Ep	11-20-95	0800
Cadmium (T)	< 0.52 mg/kg	6010	Ep	11-20-95	0800
Aluminum (T)	520 mg/kg	6010	Ep	11-20-95	0800
Calcium (T)	24992 mg/kg	6010	Ep	11-20-95	0800
Titanium (T)	24.3 mg/kg	6010	Ep	11-20-95	0800

Method Sources
- EPA-Test Methods for Evaluating Solid Waste, SW-846 3rd Ed.
- EPA-Methods for Chemical Analysis of Water and Wastes (1983)
- Standard Methods for the Examination of Water and Waste-water, 18th Ed.
- 40 CFR Part 136
- NIOSH Manual of Analytical Methods (1994)

SouthEastern SEAS Analytical Services, Inc.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/8250

Client: Nichols Research Corporation
Sample Description: 9611141015
Matrix: SOLID
Analyst: R.F. Parks

Laboratory No: 1478-[illegible]
Date Received: 11/16/96
Date Extracted: 11/17/96
Date analyzed: 11/23/96

Compounds	MDL¹ ug/Kg	Conc² ug/Kg	Compounds	MDL¹ ug/Kg	Conc² ug/Kg
Bis(2-chloroethyl)ether	330	BMDL	4-Chlorophenyl phenyl ether	330	BMDL
1,3-Dichlorobenzene	330	BMDL	Fluorene	330	BMDL
1,2-Dichlorobenzene	330	BMDL	Azobenzene	330	BMDL
1,4-Dichlorobenzene	330	BMDL	Hexachlorobenzene	330	BMDL
Bis(2-chloroisopropyl)ether	330	BMDL	Phenanthrene	330	BMDL
N-Nitroso-di-n-propylamine	330	BMDL	Anthracene	330	BMDL
Hexachloroethane	330	BMDL	Di-n-butyl phthalate	330	BMDL
Nitrobenzene	330	BMDL	Fluoranthene	330	BMDL
Isophorone	330	BMDL	Pyrene	330	BMDL
Bis(2-chloroethoxy)methane	330	BMDL	Butylbenzyl phthalate	330	BMDL
1,2,4-Trichlorobenzene	330	BMDL	3,3'-Dichlorobenzidine	330	BMDL
Naphthalene	330	BMDL	Benzo(a)anthracene	330	BMDL
Hexachlorobutadiene	330	BMDL	Chrysene	330	BMDL
2-Chloronaphthalene	330	BMDL	Bis(2-ethylhexyl)phthalate	330	BMDL
Dimethyl phthalate	330	BMDL	Di-n-octyl phthalate	330	BMDL
2,6-Dinitrotoluene	330	BMDL	Benzo(b)fluoranthene	330	BMDL
Acenaphthylene	330	BMDL	Benzo(k)fluoranthene	330	BMDL
Acenaphthene	330	BMDL	Benzo(a)pyrene	330	BMDL
2,4-Dinitrotoluene	330	BMDL	Indeno(1,2,3-cd)pyrene	330	BMDL
Diethyl phthalate	330	BMDL	Dibenzo(a,h)anthracene	330	BMDL
Benzidine	660	BMDL	Benzo(g,h,i)perylene	330	BMDL
4-Bromophenyl phenyl ether	330	BMDL	N-Nitrosodiphenylamine	330	BMDL
N-nitrosodimethylamine	330	BMDL	OTHER COMPOUNDS**		
Hexachlorocyclopentadiene	330	BMDL	2-Methylnaphthalene	330	BMDL

SURROGATE RECOVERIES	% REC
Nitrobenzene-D5	90
2-Fluorobiphenyl	98
Terphenyl-d14	125

1 MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 ND=Not Determined

Reviewed by: [signature]
Date: 12-3-96

Comments: * Present in sample, but less than method detection limit.
** Tentatively identified and quantitatively estimated.

SouthEastern SEAS Analytical Services, Inc.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/625

Client: Nichols Research Corporation	Laboratory No: [illegible]
Sample Description: 0511141016	Date Received: [illegible]
Matrix: SOLID	Date Extracted: [illegible]
Analyst: [illegible] Parks	Date Analyzed: [illegible]

Compounds	MDL1 ug/Kg	Conc2 ug/Kg	Additional Compounds	MDL1 ug/Kg	Conc2 ug/Kg
Phenol	330	BMDL	1-Methylnaphthalene	330	BMDL
2-Chlorophenol	330	BMDL	Acetophenone	330	BMDL
2-Nitrophenol	330	BMDL	2-Acetylaminofluorene	330	BMDL
2,4-Dimethylphenol	330	BMDL	1-Nitropyrene	330	BMDL
2,4-Dichlorophenol	330	BMDL	1,2-Diphenylhydrazine	330	BMDL
4-Chloro-3-Methylphenol	330	BMDL			
2,4,6-Trichlorophenol	330	BMDL			
2,4-Dinitrophenol	1650	BMDL			
4-Nitrophenol	1650	BMDL			
2-Methyl-4,6-Dinitrophenol	1650	BMDL			
Pentachlorophenol	1650	BMDL			
OTHER COMPOUNDS					
2- &/or 3-Methylphenol	330	BMDL			
4-Methylphenol	330	BMDL			
2,4,5-Trichlorophenol	330	BMDL			

SURROGATE RECOVERIES	% REC
Phenol-d6	101
2-Fluorophenol	110
2,4,6-Tribromophenol	88

1 MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 ND=Not Determined

Reviewed by [signature]

Date: [illegible]

Comments: * Presence indicated, but less than method detection limit.
** Tentatively Identified are quantitatively estimated

SouthEastern SEAS Analytical Services, Inc.

Nitroaromatics and Nitramines by HPLC

USEPA Method 8330

Client Name: Nichols Research Corporation
Client ID: [illegible]
SEAS ID: 1416-3205-03

Date Analyzed: 11/28/96
Date Received: 11/06/96
Date Extracted: 11/20/96

Compound	MDL ug/Kg	Conc ug/Kg
HMX	22.7	BMDL
RDX	36.3	BMDL
1,3,5-TNB	39.6	BMDL
1,3-DNB	14.0	NR
NB	17.5	NR
Tetryl	50.8	NR
2,4,6-TNT	26.2	BMDL
2-Am-DNT	25.7	NR
4-Am-DNT	15.2	NR
2,4-DNT	96.5	BMDL
2,6-DNT	70.7	BMDL
2-NT	38.3	NR
4-NT	42.9	NR
3-NT	36.4	NR

Comments: NR = Not Requested, BMDL = Below minimum detection limit
Analyst: Elias Tallman
Approved: ____________

SouthEastern
SEAS
ANALYTICAL SERVICES, INC.
[illegible] DR. SUITE 1 · HUNTSVILLE, ALABAMA [illegible]

[illegible]/1995

Laboratory Report

Client Nichols Research Corporation [illegible]
[illegible] Memorial Parkway
Huntsville, AL [illegible]

ATTN: [illegible]

Sample ID: Soil-[illegible]
Date Received: 11/[illegible]/1995
Purchase Order No.: Quote

Lab No.: [illegible]-04
Date Sampled: 1995-11-14
Time Sampled: [illegible]

Parameter	Results	Method	Analyst	Date	Time
Nitrate	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Copper (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Lead (T)	< [illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Chromium (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Mercury (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Barium (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	1400
Nickel (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Potassium (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Zinc (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (T)	< [illegible] mg/kg	[illegible]	[illegible]	12-[illegible]-95	[illegible]
Aluminum (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Calcium (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]
Titanium (T)	[illegible] mg/kg	[illegible]	[illegible]	[illegible]	[illegible]

Method Sources
EPA Test Methods for Evaluating Solid Waste, SW-846 [illegible]
EPA-Methods for Chemical Analysis of Water and Wastes ([illegible])
Standard Methods for the Examination of Water and Waste-
water, [illegible] Ed.
[illegible] CFR Part [illegible]
[illegible] Manual of Analytical Methods ([illegible])

SouthEastern SEAS Analytical Services, Inc.

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/8835

Client : Nichols Research Corporation	Laboratory No: 1416-8306-04
Sample Description: 951[illegible]-1017	Date Received: 11/16/95
Matrix : SOLID	Date Extracted: 11/17/95
Analyst: B.F. Parks	Date Analyzed: 11/20/95

Compounds	MDL1 ug/Kg	Conc2 ug/Kg	Compounds	MDL1 ug/Kg	Conc2 ug/Kg
Bis(2-chloroethyl)ether	330	BMDL	4-Chlorophenyl phenyl ether	330	BMDL
1,3-Dichlorobenzene	330	BMDL	Fluorene	330	BMDL
1,4-Dichlorobenzene	330	BMDL	Azobenzene	330	BMDL
1,2-Dichlorobenzene	330	BMDL	Hexachlorobenzene	330	BMDL
Bis(2-chloroisopropyl)ether	330	BMDL	Phenanthrene	330	BMDL
N-Nitroso-di-n-propylamine	330	BMDL	Anthracene	330	BMDL
Hexachloroethane	330	BMDL	Dibutyl phthalate	330	BMDL
Nitrobenzene	330	BMDL	Fluoranthene	330	BMDL
Isophorone	330	BMDL	Pyrene	330	BMDL
Bis(2-chloroethoxy)methane	330	BMDL	Butylbenzyl phthalate	330	BMDL
1,2,4-Trichlorobenzene	330	BMDL	3,3'-Dichlorobenzidine	330	BMDL
Naphthalene	330	BMDL	Benzo(a)anthracene	330	BMDL
Hexachlorobutadiene	330	BMDL	Chrysene	330	BMDL
2-Chloronaphthalene	330	BMDL	Bis(2-ethylhexyl)phthalate	330	BMDL
Dimethyl phthalate	330	BMDL	Di-n-octyl phthalate	330	BMDL
2,6-Dinitrotoluene	330	BMDL	Benzo(b)fluoranthene	330	BMDL
Acenaphthylene	330	BMDL	Benzo(k)fluoranthene	330	BMDL
Acenaphthene	330	BMDL	Benzo(a)pyrene	330	BMDL
2,4-Dinitrotoluene	330	BMDL	Indeno(1,2,3-cd)pyrene	330	BMDL
Diethyl phthalate	330	BMDL	Dibenzo(a,h)anthracene	330	BMDL
Benzidine	[illegible]	BMDL	Benzo(g,h,i)perylene	330	BMDL
4-Bromophenyl phenyl ether	330	BMDL	N-Nitrosodiphenylamine	330	BMDL
N-nitrosodimethylamine	330	BMDL	OTHER COMPOUNDS:**		
Hexachlorocyclopentadiene	[illegible]	BMDL	2-Methylnaphthalene	330	BMDL

SURROGATE RECOVERIES	% REC		
Nitrobenzene-D5	85	1 MDL = Method Detection Limit	Reviewed by
2-Fluorobiphenyl	[illegible]	2 BMDL = Below Method Detection Limit	
Terphenyl-d14	1[illegible]	3 ND = Not Determined	Date: [illegible]

Comments: * Presence indicated, but less than method detection limit.
** Tentatively identified and quantitatively estimated.

SouthEastern SEAS

BASE/NEUTRAL-ACID COMPOUNDS

GC/MS Report

USEPA Method 8270/625

Client: Nichols Research Corporation
Sample Description: 851114317
Matrix: SOLID
Analyst: S.P. Parks

Laboratory No: 1439 9306 04
Date Received: 11/ 6/95
Date Extracted: 11/17/95
Date Analyzed: 11/20/95

Compounds	MDL1 ug/Kg	Conc2 ug/Kg	Additional Compounds	MDL1 ug/Kg	Conc. ug/Kg
Phenol	330	BMDL	2-Methylnaphthalene	330	BMDL
2-Chlorophenol	330	BMDL	Acenaphthene	330	BMDL
2-Nitrophenol	330	BMDL	2-Acetylnaphthalene	330	BMDL
2,4-Dimethylphenol	330	BMDL	1-Nitronaphthalene	330	BMDL
2,4-Dichlorophenol	330	BMDL	2,6-Dimethylnaphthalene	330	BMDL
4-Chloro-3-Methylphenol	330	BMDL			
2,4,6-Trichlorophenol	330	BMDL			
2,4-Dinitrophenol	1600	BMDL			
4-Nitrophenol	1600	BMDL			
2-Methyl-4,6-Dinitrophenol	1600	BMDL			
Pentachlorophenol	1600	BMDL			
OTHER COMPOUNDS:					
2-Amino-4-Methylphenol	330	BMDL			
4-Methylphenol	330	BMDL			
2,4,5-Trichlorophenol	330	BMDL			

SURROGATE RECOVERIES	% REC
Phenol-d6	58
2-Fluorophenol	105
2,4,5-Tribromophenol	*2

MDL=Method Detection Limit
2 BMDL=Below Method Detection Limit
3 NDs Not Determined

Reviewed by:

Date: 12-5-95

Comments: * Presence indicated, but less than method detection limit.
** Tentatively identified and quantitatively estimated.

SouthEastern
SEAS
ANALYTICAL SERVICES, INC.

Nitroaromatics and Nitramines by HPLC

USEPA Method 8330

Client Name: Nichols Research Corporation
Client ID: 9511141037
SEAS ID: 1418-3206-04

Date Analyzed: 11/23/95
Date Received: 11/16/95
Date Extracted: 11/23/95

Compound	MDL ug/Kg	Conc ug/Kg
HMX	26.1	BMDL
RDX	40.6	BMDL
1,3,5-TNB	46.8	BMDL
1,3-DNB	17.1	NR
NB	20.6	NR
Tetryl	42.1	NR
2,4,6-TNT	30.1	BMDL
2-Am-DNT	3[illegible].1	NR
4-Am-DNT	45.5	NR
2,4-DNT	111	BMDL
2,6-DNT	81.9	BMDL
2-NT	44.7	NR
4-NT	36.3	NR
3-NT	76.3	NR

Comments: NR = Not Requested, BMDL = Below minimum detection limit
Analyst: Elise Tallman
Approved: ______________________

SouthEastern SEAS ANALYTICAL SERVICES, INC

1[illegible] OSTER DR. SUITE [illegible] HUNTSVILLE [illegible]

11/29/1995

Laboratory Report

Client: Nichols Research Corporation   Attn: Tom Martin
4040 S. Memorial Parkway
Huntsville, AL 358[illegible]

Sample ID: [illegible]   Lab. No.: 1412 8255 04
Date Received: 11/16/1995   Date Sampled: 1995-11-14
Purchase Order No.: Quote   Time Sampled: [illegible]

Parameter	Results	Method	Analyst	Date	Time
Nitrate	1.62 mg/kg	4110B	[illegible]	11-[illegible]-95	[illegible]

Method Sources:

EPA-Test Methods for Evaluating Solid Waste, SW-846 3rd Ed.
EPA-Methods for Chemical Analysis of Water and Wastes (1983)
Standard Methods for the Examination of Water and Waste-water, 18th Ed.
40 CFR Part 136
NIOSH Manual of Analytical Methods (1984)

TESTING · RESEARCH · DEVELOPMENT · CONSULTING

1418-3405

SouthEastern
SEAS
ANALYTICAL SERVICES, INC.

[illegible]
Huntsville, Alabama [illegible]
[illegible]

CHAIN OF CUSTODY/FIELD DATA SHEET

CLIENT: NUCLEAR RESEARCH CORP

CLIENT CONTACT: TOM MARTIN

CLIENT/PROJECT SITE: CAMP GRANT
[illegible] POND [illegible]
QUARRY AREA [illegible]

PROJECT NO: (FOR LAB USE ONLY)

PAGE 1 OF 1

SAMPLE DESCRIPTION/LOCATION	TYPE GRAB	TYPE COMP	MATRIX	DATE SAMPLED	TIME	PRESERVATIVE	NUMBER OF CONTAINERS	COLLECTED BY	ANALYSIS REQUESTED
WATER ID# 951114 0930	✓		WATER	95 11 14	0930	?	1	[illegible]	[illegible]
SOIL 951114 0950			SOIL		0950	NONE	1		
0945					0945		1		
0953					0953		1		
0957					0957		1		
0959					0959		1		
1002					[illegible]		1		
1004					[illegible]		1		
1005					1005		1		
1007					1007		1		
1008					1008		1		
1009					1009		1		
1012					1012		1		[illegible]
1015					1015		1		[illegible]
1017					1017		1		TEST

TURNAROUND TIME REQUESTED:

REMARKS: Total 14 [illegible] samples, hold others for analysis based on [illegible].

SHIPPED BY:
UPS: ______ CLIENT VEHICLE: X
FEDX: ______ LAB VEHICLE: ______
OTHER: ______

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON	RELINQUISHED TO LABORATORY BY	ACCEPTED FOR LAB BY	DATE	TIME
[signature]	[signature]	11/14	11:30	TO TRANSPORT TO LAB		[signature]	11/14	13:50

LABORATORY REMARKS:

[illegible]